

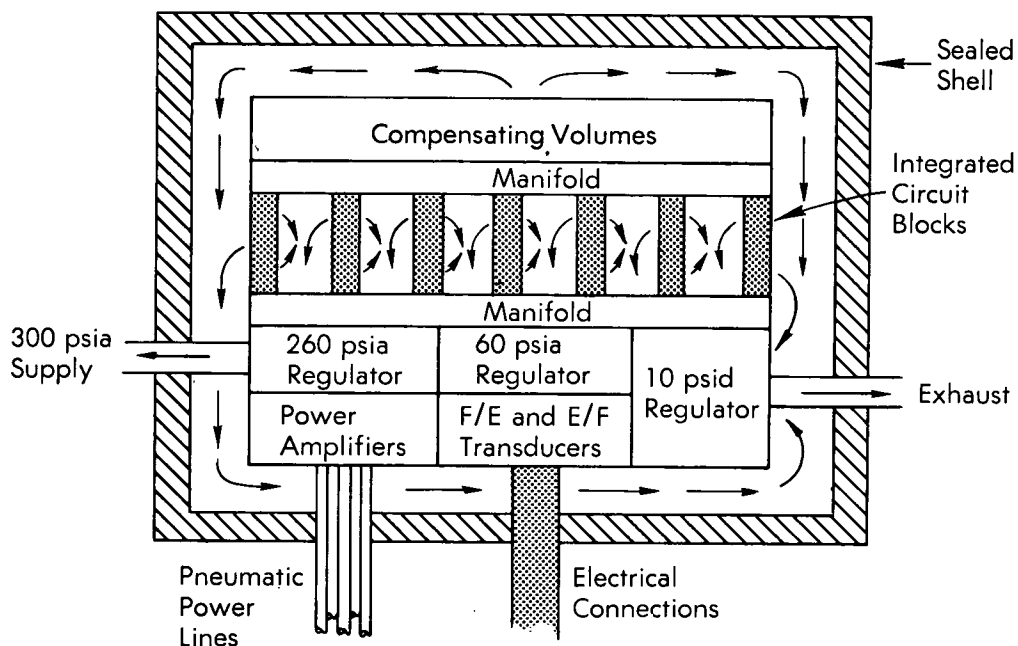
NASA TECH BRIEF

Ames Research Center



NASA Tech Briefs announce new technology derived from the U.S. space program. They are issued to encourage commercial application. Tech Briefs are available on a subscription basis from the National Technical Information Service, Springfield, Virginia 22151. Requests for individual copies or questions relating to the Tech Brief program may be directed to the Technology Utilization Office, NASA, Code KT, Washington, D.C. 20546.

Interconnections for Fluidic Circuits



The interconnection of fluidic elements with fittings and tubing is neither practical nor sufficiently reliable for aerospace applications. Consequently, one trend in aerospace technology is to group circuit elements on a functional basis in rectangular two-dimensional planar arrays or modules which permit incorporation of the maximum number of interconnections between modules. Power supplies, vent connections, and interconnections between modules can then be accommodated by spacing manifolds between the modules. The number of circuit modules that can be stacked is obviously limited, since supply and exhaust lines as well as circuit interconnections must be ported through the stacked circuit blocks.

Another method is to bring all the connections out to the edge of the module. Modules can then be stacked on edge in between manifolds which provide the fluid power supplies and circuit interconnections. As shown in the diagram depicting a rocket engine fluidic controller, a convenient arrangement can be achieved because sensors, interfaces, and compensating volumes can be located close to the circuit modules.

It may be more convenient to fabricate the manifold and interconnections as a single block for smaller fluidic circuits; in this instance, fluidic elements, sensors, and interfaces are attached externally to the manifold block. This method is useful for prototype

(continued overleaf)

applications because it permits modification or replacement of circuit elements as required.

Note:

No additional documentation is available. Specific questions, however, may be directed to:

Technology Utilization Officer
Ames Research Center
Moffett Field, California 94035
Reference: B 72-10164

Patent status:

No patent action is contemplated by NASA.

Source: Charles Mangion of
TRW Systems Group, TRW, Inc.
under contract to
Ames Research Center
(ARC-10481)